

THAT CLAIMED IS:

1. A power generator comprising:
a stator;
a rotor positioned adjacent the stator, the
rotor having a plurality of slots formed therein;
5 a plurality of a rotor coils each positioned
within a respective one of the plurality of slots; and
a plurality of rotor wedges each positioned to
retain a respective one of the plurality of rotor coils
within the one respective one of the plurality of slots,
10 each of the plurality of rotor wedges having a wedge body
and at least one substantially hollow cavity formed in
the wedge body so that the at least one hollow cavity is
substantially evenly distributed about a neutral axis of
stress applied to the wedge body when in use and so that
15 the neutral axis of stress of the wedge body having the
hollow cavity is substantially the same neutral axis of
stress of a wedge body having substantially the same
shape as the wedge body without the hollow cavity.

2. A power generator as defined in Claim 1,
wherein the at least one hollow cavity extends in a
substantially longitudinal direction through major
portions of the wedge body and is positioned
substantially within the outer peripheries of the wedge
body.

3. A power generator as defined in Claim 1,
wherein the at least one hollow cavity comprises a
plurality of longitudinally extending and substantially
hollow cavities substantially evenly distributed about
5 the neutral axis of stress of the wedge body so that the
neutral axis of stress of the wedge body having the
plurality of hollow cavities is substantially the same
neutral axis of stress of a wedge body having
substantially the same shape as the wedge body without
10 the plurality of hollow cavities.

4. A power generator as defined in Claim 1,
wherein the wedge body is elongate and substantially
rigid, wherein the wedge body includes a substantially
flat bottom surface and a substantially flat top surface,
15 the top surface having less surface area than the bottom
surface, and wherein an imaginary vertical center line
extending from the top surface to the bottom surface
divides the wedge body into two half portions, the two
half portions being substantially mirror images of each
20 other.

5. A power generator as defined in Claim 4,
wherein the at least one hollow cavity extends in a
substantially longitudinal direction through major
portions of the wedge body and is positioned
substantially within the outer peripheries of the wedge
body.

6. A power generator as defined in Claim 1,
wherein the body also includes at least a pair of side
peripheries each sloping inwardly and upwardly from the
plane of the extent of the substantially flat bottom
5 surface of the wedge body.

7. A power generator as defined in Claim 6,
wherein the intersection of the plane of the extent of
the bottom surface and the plane of the inwardly and
upwardly sloping of the pair of side peripheries define
5 a predetermined angle, the predetermined angle being in
the range of about 5 degrees to about 45 degrees.

8. A rotor wedge for a power generator, the
rotor wedge comprising a wedge body and at least one
substantially hollow cavity formed in the wedge body so
that the at least one hollow cavity is substantially
5 evenly distributed about a neutral axis of stress applied
to the wedge body when in use and so that the neutral

axis of stress of the wedge body having the hollow cavity
is substantially the same neutral axis of stress of a
wedge body having substantially the same shape as the
10 wedge body without the hollow cavity.

9. A rotor wedge as defined in Claim 8,
wherein the at least one hollow cavity extends in a
substantially longitudinal direction through major
portions of the wedge body and is positioned
5 substantially within the outer peripheries of the wedge
body.

10. A rotor wedge as defined in Claim 8,
wherein the at least one hollow cavity comprises a
plurality of substantially hollow cavities substantially
evenly distributed about the neutral axis of stress of
5 the wedge body so that the neutral axis of stress of the
wedge body having the plurality of hollow cavities is
substantially the same neutral axis of stress of a wedge
body having substantially the same shape as the wedge
body without the plurality of hollow cavities.

11. A rotor wedge as defined in Claim 8,
wherein the wedge body is elongate and substantially
rigid, wherein the wedge body includes a substantially
flat bottom surface and a substantially flat top surface,
5 the top surface having less surface area than the bottom
surface, and wherein an imaginary vertical center line
extending from the top surface to the bottom surface
divides the body into two half portions, the two half
portions being substantially mirror images of each other.

12. A rotor wedge as defined in Claim 11,
wherein the at least one hollow cavity extends in a
substantially longitudinal direction through major
portions of the wedge body and is positioned

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substantially within the outer peripheries of the wedge body.

13. A rotor wedge as defined in Claim 9, wherein the body also includes at least a pair of side peripheries each sloping inwardly and upwardly from the plane of the extent of the substantially flat bottom 5 surface of the wedge body.

14. A rotor wedge as defined in Claim 13, wherein the intersection of the plane of the extent of the bottom surface and the plane of the inwardly and upwardly sloping of the pair of side peripheries define 10 a predetermined angle, the predetermined angle being in the range of about 5 degrees to about 45 degrees.

15. A rotor wedge as defined in Claim 14, wherein the wedge body is formed of a metal material.

16. A method of using a wedge for a power generator, the method comprising:

increasing the mass of the contents of a slot of a power generator; and

5 positioning a wedge having at least one cavity formed therein and extending longitudinally throughout major portions thereof to overlie the contents of the slot and retain the slot contents therein, the increased mass of the contents of the slot being by an amount 10 substantially equal to or less than the mass required to fill the substantially hollow cavity.

17. A method as defined in Claim 16, further comprising increasing the power output of the power generator responsive to the increased mass of the contents of the slot during operation of the power generator, and wherein the at least one substantially hollow cavity formed in the wedge is substantially evenly

distributed about a neutral axis of stress applied to the wedge when in use so that the neutral axis of stress of the wedge having the hollow cavity is substantially the same neutral axis of stress of a wedge having substantially the same shape as the wedge without the hollow cavity.

18. A method as defined in Claim 16, further comprising increasing the power efficiency of the power generator responsive to the increased mass of the contents of the slot during operation of the power generator, and wherein the at least one substantially hollow cavity formed in the wedge is substantially evenly distributed about a neutral axis of stress applied to the wedge when in use so that the neutral axis of stress of the wedge having the hollow cavity is substantially the same neutral axis of stress of a wedge having substantially the same shape as the wedge without the hollow cavity.

19. A method as defined in Claim 16, wherein the at least one hollow cavity comprises a plurality of substantially hollow cavities substantially evenly distributed about the neutral axis of stress of the wedge
5 so that the neutral axis of stress of the wedge having the plurality of hollow cavities is substantially the same neutral axis of stress of a wedge having substantially the same shape as the wedge without the plurality of hollow cavities.

10 20. A method as defined in Claim 16, wherein the at least one substantially hollow cavity longitudinally extends through major portions of the wedge.